

CLAIMS

1. A laundry detergent composition comprising;
 - 5 (i) from 5 to 40 wt %, preferably from 7 to 30 wt %, of an anionic surfactant,
 - (ii) from 1 to 20 wt %, preferably from 1 to 10 wt %, more preferably from 2 to 6 wt %, most preferably from 3 to 10 5 wt %, of a nonionic surfactant having a hydrophilic/lipophilic balance (HLB value) of from 13 to 25, preferably from 15 to 22, most preferably from 16 to 22,
 - 15 (iii) optionally from 0 to 50 wt % of a cationic surfactant,
 - (iv) optionally from 0 to less than 10 wt % of a detergency builder,
 - 20 (v) optionally from 0 to 85 wt % of an inorganic non-builder salt,
 - (vi) optionally from 0 to 3 wt % of a polycarboxylate polymer, and
 - 25 (vii) optionally other detergent ingredients to 100 wt %.
2. A detergent composition as claimed in claim 1, wherein the nonionic surfactant has a hydrophilic/lipophilic balance (HLB value) of from 14 to 19.5.
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3. A detergent composition as claimed in claim 1, wherein the nonionic surfactant (ii) is an alkoxylated alcohol nonionic surfactant.

5 4. A detergent composition as claimed in claim 3, wherein the alkoxylated alcohol nonionic surfactant has a hydrophilic/lipophilic balance (HLB value) of from 15 to 20, preferably from 16 to 18.

10 5. A detergent composition as claimed in claim 1, wherein the nonionic surfactant (ii) is an ethoxylated alcohol nonionic surfactant of the general formula I



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wherein R is a hydrocarbyl chain having from 8 to 16 carbon atoms, and the average degree of ethoxylation n is from 15 to 50, preferably 20 to 50.

20 6. A detergent composition as claimed in claim 5, wherein the ethoxylated alcohol nonionic surfactant has a hydrocarbyl chain containing from 10 to 16 carbon atoms, preferably from 12 to 15 carbon atoms.

25 7. A detergent composition as claimed in claim 5, wherein the ethoxylated alcohol nonionic surfactant has an average degree of ethoxylation n of from 16 to 40.

8. A detergent composition as claimed in claim 5, wherein
30 the ethoxylated alcohol nonionic surfactant has a hydrocarbyl chain containing from 10 to 16 carbon atoms

and an average degree of ethoxylation n of from 20 to 40.

9. A detergent composition as claimed in claim 1, wherein
5 the composition is free from nonionic surfactants other than the nonionic surfactant (ii).
10. A detergent composition as claimed in claim 1, wherein
the anionic surfactant (i) is an anionic sulphonate or
10 sulphate surfactant.
11. A detergent composition as claimed in claim 10, wherein
the anionic surfactant (i) is linear alkylbenzene
sulphonate.
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12. A detergent composition as claimed in claim 1, wherein
the weight ratio of the anionic surfactant (i) to the
nonionic surfactant (ii) is within the range of from
1:1 to 15:1, preferably from 1:1 to 10:1, more
20 preferably from 2:1 to 6:1, most preferably from 2.5:1
to 5:1.
13. A detergent composition as claimed in claim 1, wherein
the inorganic non-builder salt (v) is present in an
25 amount of from 0 to 60 wt %, preferably from 1 to 40
wt %.
14. A detergent composition as claimed in claim 1, wherein
the inorganic non-builder salt (v) is present in an
30 amount of from 1 to 80 wt %, preferably from 10 to 75
wt %.

15. A detergent composition as claimed in claim 1, wherein the inorganic non-builder salt (v) is selected from the group consisting of sodium carbonate, sodium bicarbonate, sodium sulphate, burkeite, sodium silicate and mixtures thereof.
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16. A detergent composition as claimed in claim 15, wherein sodium carbonate is present in an amount of from 10 to 50 wt %, preferably from 20 to 40 wt %.
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17. A detergent composition as claimed in claim 15, wherein the sodium sulphate is present in an amount of from 10 to 50 wt %, preferably from 20 to 40 wt %.
- 15 18. A detergent composition as claimed in claim 15, wherein the total amount of sodium carbonate and sodium sulphate is from 40 to 80 wt %, preferably from 60 to 70 wt %.
20 19. A detergent composition as claimed in claim 15, wherein the ratio of sodium carbonate to sodium sulphate is within the range of from 0.1:1 to 5:1, preferably from 0.5:1 to 1.5:1.
- 25 20. A detergent composition as claimed in claim 15, wherein the burkeite is present in an amount of from 40 to 80 wt %, and preferably from 60 to 70 wt %.
21. A detergent composition as claimed in claim 15, wherein
30 the sodium silicate is present at levels of from 0 to 20 wt %.

22. A detergent composition as claimed in claim 15, wherein the total amount of sodium carbonate, sodium sulphate, burkeite and sodium silicate is of from 50 to 85 wt %, preferably from 65 to 80 wt %.

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23. A detergent composition as claimed in claim 1, wherein the cationic surfactant (iii) is present in an amount of from 0 to 50 wt %, preferably from 0 to 10 wt %, more preferably from 1 to 5 wt %.

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24. A detergent composition as claimed in claim 1, wherein the cationic surfactant (iii) is a compound of the formula III:

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wherein R_1 is a C_8-C_{18} hydrocarbyl chain, typically an alkyl, hydroxyalkyl or ethoxylated alkyl group, optionally interrupted with a heteroatom or an ester or amide group; each of R_2 , R_3 and R_4 (which may be the same or different) is a short-chain (C_1-C_3) alkyl or substituted alkyl group; and X is a solubilising anion, preferably a chloride, bromide or methosulphate ion.

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25. A detergent composition as claimed in claim 24, wherein in the cationic surfactant (iii) R_1 is a C_8-C_{18} alkyl group, more preferably a C_8-C_{10} or $C_{12}-C_{14}$ alkyl group,

R₂ is a methyl group, and R₃ and R₄, which may be the same or different, are methyl or hydroxyethyl groups.

26. A detergent composition as claimed in claim 1, wherein
5 the polycarboxylate polymer is selected from the group consisting of sodium polyacrylate, sodium acrylate maleate and mixtures thereof.
27. A detergent composition as claimed in claim 1, which is
10 essentially free of aluminosilicate.
28. A detergent composition as claimed in claim 1, which is essentially free of detergency builder (iv).
- 15 29. A detergent composition as claimed in claim 1, which further comprises one or more additional surfactants in an amount of from 0 to 50 wt %, preferably from 0 to 10 wt %.
- 20 30. A detergent composition as claimed in claim 1, which further comprises one or more optional ingredients (vi) selected from soap, peroxyacid and persalt bleaches, bleach activators, air bleach catalyst, sequestrants, cellulose ethers and esters, cellulosic polymers, other
25 antiredeposition agents, fluorescers, photobleaches, polyvinyl pyrrolidone, other dye transfer inhibiting polymers, foam controllers, foam boosters, acrylic and acrylic/maleic polymers, proteases, lipases, cellulases, amylases, other detergent enzymes, citric acid, soil release polymers, fabric conditioning compounds, coloured speckles, and perfume.
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31. A detergent composition as claimed in claim 1,
which is in powder form.

32. A process for laundering textile fabrics by machine or
5 hand, which includes the step of immersing the fabrics
in a wash liquor comprising water in which a laundry
detergent composition as claimed in claim 1 is
dissolved or dispersed.

10 33. Use of a nonionic surfactant having a
hydrophilic/lipophilic balance (HLB value) of from 13
to 25, preferably from 15 to 22, most preferably from
16 to 22, to improve the stain removal of laundry
detergent compositions comprising;

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(i) from 5 to 40 wt % preferably from 7 to 30 wt %, of
an anionic surfactant,

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(ii) from to 20 wt %, preferably from 1 to 10 wt &, more
preferably from 2 to 6 wt %, most preferably from 3
to 5 wt %, of the nonionic surfactant,

(iii) optionally from 0 to 50 wt % of a cationic
surfactant,

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(iv) optionally from 0 to less than 10 wt % of a
detergency builder,

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(v) optionally from 0 to 85 wt % of an inorganic non-
builder salt

- (vi) optionally from 0 to 3 wt % of a polycarboxylate polymer, and
- (vii) optionally other detergent ingredients to 100 wt %.